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| 09/272,331 | 03/19/1999 | HIROKI ENDO | SON-1508 | 5505 |

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EXAMINER

TILLERY, RASHAWN N

ART UNIT

PAPER NUMBER

2612

DATE MAILED: 11/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/272,331

Applicant(s)

ENDO ET AL. 

Examiner

Rashawn N Tillery

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 4, 6-7 and 9-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Snow et al (US4876167).

Snow teaches forming a color filter array on the surface of CCD semiconductor image sensors. The color filter array is made up of primary filters red, green and blue, each of which is produced by two subtractive primary dyes- cyan, magenta and yellow (see col. 27, lines 14-68 and col. 28, lines 1-66).

Regarding claim 1, Snow discloses, in figures 1 and 2, a method of producing a color filter, comprising the steps of:

forming a filter layer of a second color (yellow, magenta or cyan) in a region in which a filter element of a first color (red, green or blue) is to be formed; and

stacking a filter of a third color (yellow, magenta or cyan) different from the second color on the filter layer of the second color (see examiners notes above).

Regarding claim 2, Snow discloses the first color is a primary color, and each of the second and third colors is a complementary color (see examiners notes above).

Regarding claim 4, Snow discloses, in figures 1 and 2, the color filter is composed of filter elements of a plurality of the first colors each of which is either of red, green and blue colors; and

the filter elements of the plurality of the first colors are produced by the steps of:
forming a yellow filter layer as a filter layer of the second or third color region in which the filter elements of red and green colors as the first colors are to be formed (in figures 1 and 2, the red color filter is formed of yellow and magenta and the green color filter is formed of yellow and cyan);

forming a cyan filter layer as a filter layer of the second or third color in a region in which the filter elements of green and blue colors as the first colors are to be formed (in figures 1 and 2, the green color filter is formed of yellow and cyan and the blue color filter is formed of cyan and magenta); and

forming a magenta filter layer as a filter layer of the second or third colors in a region in which filter elements of red and blue colors as the first colors are to be formed (in figures 1 and 2, the red color filter is formed of yellow and magenta and the blue color filter is formed of cyan and magenta).

Regarding claim 6, see claim 1 above.

Regarding claim 7, see claim 2 above.

Regarding claim 9, see claim 4 above where the red color filter is discussed.

Regarding claim 10, see claim 4 above where the green color filter is discussed.

Regarding claim 11, see claim 4 above where the blue color filter is discussed.

Regarding claim 12, see claim 1 and examiner's notes above.

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Regarding claim 13, see claim 2 above.

Regarding claim 14, see claim 9 above.

Regarding claim 15, see claim 10 above.

Regarding claim 16, see claim 11 above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 3, 8 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Snow in view of Needham et al (US5140396).

Regarding claims 3, 8 and 17, Snow teaches forming a color filter array on the surface of CCD semiconductor image sensors. Snow also discloses, in the background of the invention, that a common approach to forming color filter arrays is to blend a mordant with a negative-working photoresist. Snow does not expressly disclose filter layers made from a dye containing positive photoresist.

Needham teaches forming a color filter array on the surface of CCD semiconductor image sensors. Needham further reveals that it is well known in the art to either utilize a negative or positive photoresist for forming a filter on a substrate (see col. 5, lines 11-38). Needham additionally discloses the advantages of using a positive

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photoresist in the present invention as opposed to a negative photoresist (see col. 7, lines 39-62). It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement Needham's teachings of forming a filter using a positive photoresist since the negative photoresists are susceptible to problems caused by swelling of the photoresist.

2. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snow in view of Yamada (US5805966) in further view of Ugai et al (EP726503A2).

Regarding claim 5, Snow teaches filters colored with a plurality of dyes which can be mixed or segregated in separate layers. Snow does not expressly disclose the specific dyes as claimed. However, both Yamada and Ugai disclose well-known dyes for cyan, magenta and yellow. Yamada discloses, in col. 9, lines 37-43, that the color toner for magenta may be a magenta dye of xanthene group. Ugai discloses, on page 9, line 58, that the yellow colorant includes condensed azo compounds; and on page 10, line 8, that the cyan colorant includes copper phthalocyanine compounds. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement Yamada and Ugai's teachings of well-known dyes for cyan, magenta and yellow since Snow teaches dying filters to produce color images.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rashawn N Tillery whose telephone number is 703-305-0627. The examiner can normally be reached on 9AM-6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on 703-305-4929. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

RNT
November 3, 2002


WENDY R. GARBER
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